

EPA COMMUNITY INFORMATIONAL GROUP MEETING SUMMARY
MOTOROLA 52ND STREET SUPERFUND

DRAFT DOCUMENT

Prepared by:

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June 2012

**Community Information Group Meeting
Motorola 52nd St. Superfund Site
April 25, 2012
Bioscience High School, Phoenix, AZ**

Project Team and Regulator Attendees:

United States Environmental Protection Agency (EPA): Janet Rosati, Leana Rosetti, Gerry Hiatt, Martin Zeleznik,

EPA Contractor: Shaw Environmental, Inc. (Shaw): Sue Kraemer, Doug Hulmes

Arizona Department of Environmental Quality (ADEQ): Harry Hendler, Brian Stonebrink, Joellen Meitl, Wendy Flood, Andre Chiaradia, Travis Barnum; Felicia Calderon

ADEQ Contractor: William Neese, URS Corporation

Technical Assistance Grant (TAG) Technical Advisor: Richard Rushforth

Moderator: Marty Rozelle

CIG Members:

Anayensi Almaraz
Doug Tucker Les Holland
Rena Chase-Dufault
Martha Breitenbach (via telephone)

Mary Moore
Quentin Boyce
Wendoly Abrego

Additional attendees:

Barbara Murphy
Chris Legg
Delores Sullens
Denise Moreno
Eva Olivas
Gregg Elliot
Ira Doonsky
Jenn McCall
Loren Lund
Mark Brusseau
Nick Reithel

Ray Chase
Virgina Chase
Rob Mongrain
Robert Livermore
Shoshana Kroeger
Sarah T. Wilkinson, PhD
Steve Brittle
Tasha Lewis
Tom Padgett
Tom Suriano
Troy Kennedy

The following acronyms may be used throughout this document:

ADEQ	Arizona Department of Environmental Quality	RI/FS	Remedial Investigation/Feasibility Study
ADHS	Arizona Department of Health Services	OU	Operable Unit
CIG	Community Information Group	PCE	Tetrachloroethylene
CMD	Contaminate Mass Discharge	TCE	Trichloroethylene
CoC	Contaminant of Concern	PRP	Potential Responsible Party
DCE	Dichloroethylene	ug/l	Microgram/liter
EPA	Environmental Protection Agency	VC	Vinyl Chloride
HHRA	Human Health Risk Assessment	VOC	Volatile Organic Compound

A Community Information Group (CIG) meeting was held at Sonoran Science Academy, located at 4837 E. McDowell Road Street in Phoenix, Arizona from approximately 6:20 pm to 8:30 pm on April 25, 2012. The primary purpose of the meeting was to update the public on the current status and remedial progress at the Motorola 52nd Street Superfund Site, answer questions leftover from previous meetings, and present information regarding new groundwater remedial technologies. The meeting also provided a forum for interaction between stakeholders, regulators and the public.

The meeting notes and the Powerpoint presentations presented at this CIG meeting are posted on EPA's and ADEQ's Motorola project websites:

www.epa.gov/region09/motorola52ndst
<http://www.azdeq.gov/enviro/waste/sps/phxsites.html#mot52a>

6:20 pm: Ms. Rozelle began the meeting. Ms. Abrego introduced two new CIG members: Quentin Boyce and Anayansi Almaraz as well as the other attending CIG members. The potentially Responsible Party (PRP), and governmental agency representatives were introduced. Ms. Rozelle presented the agenda and ground rules, including if anyone is videotaping the meeting, he or she needs to inform the meeting attendees. She asked if the CIG members had comments or issues regarding the January 25th, 2012 CIG meeting minutes. There were no comments or corrections suggested by CIG members. Ms. Moore suggested that Dr. Brusseau's be the first presenter; the CIG and audience agreed.

New Technologies and Research for Groundwater Treatment – Dr. Mark Brusseau, University of Arizona Superfund Basic Research Program (6:35 pm)

Ms. Rozelle asked if it the audience could ask questions during the presentation; Dr. Brusseau indicated he had no problems with answering questions during the presentation. Dr. Brusseau is part of the University of Arizona Superfund Research Program.

Dr. Brusseau's main points:

- There are two primary methods of containing groundwater contamination plumes: pump and treat and permeable reactive barrier.

Dr. Brusseau described how a permeable barrier worked; often iron filings are emplaced in a trench which react with chlorinated solvents and “destroy” the solvent.

Community member asked for clarification for destroy; Dr. Brusseau indicated the solvents are eventually degraded to carbon dioxide, water and chlorine molecules or other non-toxic material. Mr. Brittle asked how long has the iron filing technology been used; Dr. Brusseau responded mid-1990's. Community member asked what is done with the barrier after remediation is complete; Dr. Brusseau answered, excavated or left in place. Mr. Brittle asked what happens to the rust; Dr. Brusseau answered, it reacts with the TCE and can be eventually used up. Community member asked if there was contamination beyond the barrier, would this method work; Dr. Brusseau answered, this method would not treat contamination down gradient of the barrier. Ms. Moore asked what range of chlorinated solvents this method would be effective; Dr. Brusseau answered that it can be effective against a wide range of chlorinated solvents. Ms. Chase-Dufault asked what happens when the iron gets used up; Dr. Brusseau answered that it must be monitored; more iron can be added as necessary. Dr. Brusseau explained a series of boreholes must be used instead of trenches for installation, if groundwater is deep.

- There are five methods to remediate source zones:
 1. Small pump and treat system
 2. In-situ chemical oxidation (ISCO)
Mr. Holland asked if oxygen is the primary constituent in ISCO; Dr. Brusseau indicated that they are all oxidants. Community member asked about offset wells in the displayed

drawing and if they were there to capture off-gassing. Dr. Brusseau indicated the drawing was a generic cartoon and yes there would be some off-gassing. He explained how ISCO is injected into heterogeneous matrices. Community member asked if rocks will absorb the oxidants; Dr. Brusseau answered that is the ISCO goal, to get the oxidants into the matrix. Ms. Moore asked if Freescale has done a pilot test like study for ISCO. Mr. Suriano of Clear Creek and Associates (Freescale's consultant) replied they looked at several options; the major issue with ISCO was deep water tables and not enough indigenous microbes for bio-injection. Dr. Wilkinson asked if the appropriate microbes could be introduced. Mr. Suriano replied they must get approval from regulatory agencies first. Clear Creek and Associates have worked with national labs to derive appropriate site-specific microbes, and there must be a certain quantity of indigenous microbes within the depths at the OU1 area of the Motorola 52nd Street Superfund Site.

6:55 pm: Ms. Rozelle moderated, indicating that Dr. Brusseau's presentation may cover some of these issues.

Dr. Brusseau resumed covering the following:

3. Zero-valent colloidal iron
4. Enhanced bio-remediation
5. Thermal treatment

Community member asked if there would be off-gassing from thermal treatment; Dr. Brusseau indicated that it would and gases would need to be collected and treated before release to the atmosphere. Mr. Holland asked how high the temperatures were; Dr. Brusseau answered 100 to 500 degrees Celsius. Community member asked what is the heat source; Dr. Brusseau stated that it could be electric and/or radio waves. CIG member asked if the fumes would be harmful; Dr. Brusseau answered that they could be, that's why that could not be released to the atmosphere without treatment.

- Assessment of site-specific remediation performance.

A primary method is contaminate mass discharge (CMD) versus time. Dr. Brusseau discussed the Superfund sites in Tucson and OU2. Community member asked if contaminate mass had pooled up and if the "pools" could be injected at OU2; Dr. Brusseau answered that potentially, but it would take a lot of investigation work. Community member asked what investigations have been done at M52; Dr. Brusseau indicated he is not familiar with how much research has been done at M52. Mr. Brittle asked what has been done in Tucson; Dr. Brusseau stated permanganate injection has had some success in Tucson. Mr. Holland asked why the injection was stopped; Dr. Brusseau said they had to stop to assess remedial progress. Community member asked who makes the decision to continue with remediation; Dr. Brusseau stated that it was a collaboration with the PRP and regulatory agencies. Ms. Moore asked if there is a plan to do more injection at the Tucson site and other sites. EPA Remedial Project Manager Mr. Zeleznik joined Mr. Brusseau and explained that these are pilot tests, and they are still in the process of reviewing data. Ms. Moore asked for clarification on how CMD is calculated. Dr. Brusseau explained water coming into the treatment plant is sampled, to derive a composite concentration. A composite flow rate is also calculated. Community member asked if treated water is re-injected to the aquifer; Dr. Brusseau answered that it was being injected at the Tucson site. Mr. Tucker asked where specifically the pilot test was conducted at the Tucson site; Dr. Brusseau displayed the two source zones where permanganate was injected. Mr. Tucker said if injection would be done throughout the entire site; Dr. Brusseau indicated that ISCO is typically only conducted in source zones, as it would be too expensive to inject in the entire site. Ms. Rosetti asked if there was fractured bedrock at the subject source area at the Tucson site; Mr. Zeleznik indicated no. Ms. Moore asked for more clarification regarding flow rate into the treatment plant. Dr. Brusseau explained that the flow rate is dictated primarily by the pumping rate.

Community member asked what they did before cleaning up the contamination, were people in Tucson drinking this water; Dr. Brusseau answered that there were potable supply wells in the area. Mr. Brittle asked if this technology is widely known and used throughout the country; Dr. Brusseau stated that it is on a small (pilot) scale. Dr. Brusseau summarized it is more important to look at long-term management with large plumes, and emphasized the five-year review is very useful, because it evaluates progress and the potential to implement emerging technologies. Ms. Abrego asked if ISCO had been used in fractured bedrock; Dr. Brusseau indicated it had on a small scale. Mr. Holland stated it looked like something good was happening in the four years based on the displayed chart and is there an explanation for that; Dr. Brusseau indicated he was not familiar enough with OU1. Mr. Holland asked if the OU1 people had an explanation for the favorable remedial data; Mr. Suriano indicated there were some oxidation efforts early and there has been considerable extraction from bedrock in the source areas, which removed considerable mass of contamination.

7:20 pm

Dr. Brusseau concluded that if there are any more questions; they can email them to him.

7:22 pm

Ms. Rozelle moderated the next portion of the meeting: Review of past business; status updates, and introduction of Ms. Rosetti. Ms. Rosetti indicated she compiled a list of questions from previous meetings, answers to which are included in handouts. She indicated there was not enough time to go through all the questions; however there was one question that Ms. Flood would answer regarding how VOC emissions from the operating air strippers are treated.

Ms. Flood explained that emissions from the air stripper are treated with the best available technology, which is granulated active carbon. Ms. Moore asked if Maricopa County has air regulations specifically for Superfund sites. Ms. Flood and Ms. Rosetti explained that the regulations are general and not specific to Superfund sites. Ms. Flood explained that the VOC concentrations in emissions are low enough so that air treatment is not required, but is done anyway to be conservative. Ms. Moore indicated she thought that ADEQ and Maricopa County did not conduct air treatment at the North Indian Bend Wash (NIBW) Superfund Site. Ms. Flood indicated they have emissions treatment there too.

Mr. Brittle indicated that an annual emissions report must be completed for the facility; and requested that ADEQ bring this report to a future meeting. He also indicated that EPA conducted a risk assessment for the emissions from NIBW, which recommended that residences not be constructed near the emission sources. However, the City of Scottsdale built houses there and the risk assessment had to be redone. Mr. Brittle further indicated there was a big “to do” over this at NIBW. He stated there are emissions from remedial equipment and they do pose a health hazard. He stated these are harmful emissions and should be quantified

Mr. Suriano indicated the annual emission reports are included in the Effectiveness Report; and stated the influent concentrations are below the County’s threshold values. Mr. Hendler of ADEQ explained Maricopa County Rule 300, which states air pollution controls cannot be removed, even though the PRPs petitioned the agency to remove them. Mr. Hendler explained how carbon emission treatment works, that it is very protective of the atmosphere and is the best available technology Mr. Brittle stated he thought vinyl chloride was being emitted from remedial equipment historically at M52 due to the carbon not being changed often enough. Mr. Hendler indicated they do not have any data that indicates VOCs were released in quantities above regulatory levels.

Ms. Flood repeated that the actual emission release numbers are included in the Effectiveness Report. Mr. Hendler summarized the issue: One, the actual numbers are in the Effectiveness Report. He suggested that Mr. Brittle be allowed some time to review

the numbers to determine if that answers his question, and if it doesn't he can come back and ask for additional information. Two, what is the justification for allowing emissions, with controls in place, and how they relate to regulations; which is a question they can respond back to later if needed. Mr. Brittle indicated he did not have a copy of the Effectiveness Report and asked if the information could be brought to the public here. Ms. Rosetti indicated she could provide the presentation concerning the emissions. Ms. Rozelle moderated, indicating this topic was discussed one or two meetings ago. Ms. Rosetti indicated they try to cover new topics each meeting and repeated she could provide Mr. Brittle the report which contained the emission data he was looking for.

7:33 pm

Community member asked when the last time the carbon was changed; Mr. Suriano answered within the last year.

7:35 pm

Ms. Rozelle moderated and introduced Mr. Chiaradia of ADEQ. Mr. Chiaradia gave a brief update on the Kachina-Joray site and mentioned he is conducting preliminary investigations of other PRP facilities. Community member asked if there was a separate meeting for OU2; Mr. Chiaradia indicated there wasn't and that OU2 is included in the CIG meetings. Ms. Moore asked who Mr. Chiaradia was working with; he stated he is working with parties that have had settlements as part of the overall OU2 investigation, and explained the investigation process and status.

7:40 pm

Ms. Flood explained a misstatement regarding DNAPL investigations in bedrock from a previous meeting. She had indicated in a previous meeting that there had not been any investigation of DNAPL in bedrock at the last meeting. However, there actually has been a lot of investigation work since when extraction wells were installed in the bedrock in the 1980s, along with several other studies and current extraction.

7:45 pm

Ms. Rozelle indicated it was time for the public comment period. Ms. Rosetti referenced handouts that summarized unanswered questions from previous meetings. Specific ones were discussed as summarized below:

-Ms. Rosati explained the public comment process for the five-year review.

Ms. Rosetti explained that stakeholders who were interviewed for the Five-Year Review Report gave their permission for their personal information to be included on the interview sheet. community member

-Mr. Stonebrink answered the question pertaining to the 10-fold decrease in agency oversight O&M costs in OU1 and OU2; he cited staff turnover as a primary reason and stated that there was no disruption in agency reviews of deliverables.

-Ms. Flood answered the question pertaining to commencement of soil remediation at the acid treatment plant in OU1. She stated ADEQ is currently reviewing the applicability of soil treatment options and the relation to the decision document. Mr. Holland asked when remediation would begin; Ms. Flood indicated no specific date is set. Community member asked if there are potential legalities that would allow ADEQ to avoid remediation; Ms. Flood stated no because soil remediation is included in the ROD and the decision document. Mr. Brittle asked when the interim ROD was completed; Ms. Flood answered 1992. Mr. Brittle voiced concerned that it has been 20 years. Ms. Flood summarized the process, activities performed in that time and interactions required between several entities.

7:50pm

Mr. Stonebrink answered the question pertaining to vapor intrusion in OU2 that will be evaluated as part of the upcoming OU2 Site-wide RI/FS. He indicated Honeywell is currently conducting an indoor air vapor intrusion assessment at their 34th Street Facility. Mr. Holland asked a follow up question about the VI investigation at OU2. Mr.

Stonebrink stated that vapor intrusion will be addressed in the RI/FS throughout the extent of the OU2 area and groundwater plume. .

Ms. Flood answered the question: What is the reason for the discrepancy between completion dates for Issue #20, which has to do with PRP searches. Ms. Flood summarized that as ADEQ obtains and reviews more data, it is possible that new data could suggest there could be additional PRPs. In such cases, ADEQ will conduct additional PRP searches as necessary, which explains the differences in completion dates for PRP searches.

Mr. Stonebrink answered the question regarding increase in the water table at the BSVE system in OU2 and its effect on the efficiency of the system. Mr. Stonebrink summarized by indicating that as long the well screens are not submerged, the system will still be effective. Ms. Moore asked about how close wells were to becoming submerged. Ms. Lewis, of CH2MHill, the consultant for Honeywell provided some specifics on how partially submerged well screens can still be utilized. Ms. Moore asked if it would be possible to get information on water levels and wells screens. Ms. Lewis said yes, this information is included in quarterly reports, which are public information. Ms. Moore indicated the reports are not in Saguaro library. Ms. Rosetti indicated she would double check the availability of these reports.

8:00 pm

To answer the question regarding the potential inclusion of OU3 into the next five-year review, Ms. Rosati indicated they need a ROD before OU3 can be included in a five-year review, Ms. Rosati stated hopefully there will be a ROD in place by the time of the next five-year review; if not, OU3 will be discussed in the same manner as before. Community member asked if no remedy would be an option at OU3. Ms. Rosati indicated it would be depend on the Feasibility Study. She also stated there has been significant decrease in OU3 concentrations, likely due to the OU2 treatment plant.

Ms. Rosati addressed a comment about detailed catalogues of the homes screened for vapor intrusion. Ms. Rosati explained how household chemicals were addressed in the OU1 vapor intrusion investigation; and the importance of looking at complementary lines of data.

This concluded the responses to the previous meetings questions.

8:03 pm

Ms. Rozelle introduced Mr. Rushforth, the TAG advisor. He discussed TAG activities since the last meeting. A primary conclusion/request was that each parcel, including Brunson-Lee school, in the Linden Park Neighborhood should be assessed using the multiple lines of evidence (i.e., sub-slab, soil vapor probes and indoor air samples). Mr. Tucker voiced concerned that during construction, soil is moved and compacted, which could alter soil vapor sampling results. Ms. Rosati replied that soil gas will move into new/compacted soil, because the source is still there.

8:15 pm

Ms. Rosati presented a summary of the OU1 vapor intrusion study. She concluded her presentation stating that sub-slab and indoor air data is under review. She stated it is likely that new areas will be sampled in the next round.

Ms. Rozelle moderated the question of how the West Van Buren WQARF boundary was established. Ms. Rosati summarized that ADEQ and EPA agreed that Motorola contamination would not likely migrate down gradient of 7th Avenue, based on available data at the time. Mr. Brittle asked if there was a legal decision; Ms. Rosati indicated that it was an agreement among management personnel from ADEQ and EPA and there is no legal document stating such. Mr. Brittle asked if the boundary was determined by science; Ms. Rosati stated that a model was conducted. Mr. Brittle voiced concerned for people down gradient of 7th Avenue, based on ambient air data. Ms. Moore asked how

EPA is coordinating OU3 with the water treatment plant at OU2. Ms. Rosati indicated that they are currently working on getting the RI/FS completed for OU3.

8:22 pm

Ms. Rozelle announced Call to the Public. Mr. Brittle voiced his concern that progress has been minimal in 20 years. He indicated he did not like “evasive” answers by regulatory agencies and that a whole generation now been exposed from harmful vapors off-gassing from groundwater contaminate plumes. He expressed there may a “health disaster” if the appropriate health data was investigated..

8:25 pm

Ms. Rozelle announced Call to Agencies. Ms. Rosetti announced she will be taking a temporary leave of absence and announced her replacement, Mr. David Cooper. Ms. Flood indicated the OU1 and OU2 Effectiveness Report update will be discussed in the next meeting. Ms. Rosetti indicated there will also be an update on the OU1 vapor intrusion study at the next meeting. Mr. Stonebrink discussed three buildings in OU2 that were assessed as part of a remedial investigation. Ms. Moore asked about new reports for OU1 and OU2. Ms. Flood indicated the next reports will be semi-annual reports, which are produced in June or July. The group discussed meeting times and location. An agreement was reached that July 24, at the same location would be fine.

8:30 pm

Meeting adjourned.

ATTACHMENT 1
MEETING PRESENTATIONS

ATTACHMENT 2
MEETING ATTENDEE LIST